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MINK RESEARCH: WET VS. WET/PELLET FEEDING PROGRAMS

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MINK RESEARCH - WET FEED VS. 5-2 WET/PELLET FEEDING PROGRAM

1.0 INTRODUCTION

Hobbs Fur Farm, of Franklin, Idaho, has been feeding the Fur-Pro pellet (made by Fur Breeders CO-OP, Midvale, Utah) for the past 8 years. Tim Hobbs, the owner, questioned the efficacy of the pellet feed. His concern was the quality of pelt being produced by mink on the wet/pellet feed program. A comparison of mink raised on the wet/pellet feed program vs. mink raised solely on a wet feed program was performed to determine if any significant differences could be noted.

2.0 LITERARY REVIEW

Only one published test has been run on the Fur-Pro pellet (1). This was done in 1988 on the Fur Breeder's Research Ranch in Midvale, Utah.

2.1 Methodology

The methodology of the experiment was as follows. One group of male and female mink kits (group size was not published) was fed the Fur Breeders wet feed only. Another group (of equal size) was fed only the Fur-Pro pellet. The research time ran from the time of separation from the adult female (middle to the end of July) until pelting time (end of November, first of December). The following items should be noted: three colors of mink were used in the Fur Breeders research, however, my experiment was only concerned with the dark mink, specific time periods were not available, and the Fur Breeders research was also performed on two

other brands of pellets. At pelting time, the mink were graded by size and by quality. A number grade was assigned to each animal for each of the two traits and a mean calculated to determine which feed produced the best pelts. The higher the number the better the grade.

2.2 Results

Table 2.2 shows results of the Fur Breeders research for dark mink.

Table 2.2 All Wet Feed vs. All Pellet Feed (Dark Mink)

| Feed Program | Quality Grade | | Size Grade | |
|--------------|---------------|-------|------------|-------|
| | M | F | M | F |
| Wet | 5.42 | 5.53 | 4.84 | 4.84 |
| Pellet | 3.95 | 5.30 | 4.05 | 4.55 |
| ----- | | | | |
| Difference | +1.47 | +0.23 | +0.79 | +0.29 |

According to the report no "significant" difference was found between the two programs with respect to the females. The males, however, showed that the wet feed program was superior to the pellet feed program in both quality and size.

3.0 RESEARCH DESIGN

The goal of the research design was to eliminate as many variables as possible to get the most reliable results. Four areas were identified as being vital to effective design:

1. Selecting
2. Housing
3. Feeding
4. Grading

3.1 Selecting

On the Hobbs farm all the kits from the pure Mullen blood strain were selected for the experiment. This was done to reduce any affects from other blood strains. All of the kits were weaned during the first and second weeks of August. No random tables or any other statistical means were employed to determine the groups. However, kits from every breeder male were present in each of the groups. The breakdown of mink on each program is as follows:

Table 3.1 Group Totals - Feed Program Research

| <u>Sex</u> | <u>Wet/Pellet</u> | <u>All Wet</u> |
|------------|-------------------|----------------|
| Males | 1251 | 274 |
| Females | 745 | 880 |

These group sizes are large enough to statistically minimize most randomness that could skew the results.

3.2 Housing

The mink of each sex were housed in identical size pens. Table 3.2 shows the pen sizes:

Table 3.2 Pen and Box Sizes (in inches):

| | <u>PEN SIZE</u> | | <u>BOX SIZE</u> | |
|--------|-----------------|----------------|-----------------|----------------|
| | <u>MALES</u> | <u>FEMALES</u> | <u>MALES</u> | <u>FEMALES</u> |
| HEIGHT | 18 | 15 | 11 | 11 |
| WIDTH | 18 | 15 | 9 | 7.5 |
| DEPTH | 15 | 15 | 9 | 9 |

Identical pen sizes for each sex were used to eliminate any pelt size advantages that occur when using different pen sizes. The mink were housed in 8 row (2 breeder, 6 furing), 32 feet wide sheds. Both sheds were built in an east-west direction.

3.3 Feeding

A wet/pellet feed program was used for the mink in shed #7. This program was as follows. From the time of weaning (first or second week of August) until the first of November the mink were on a 5-2 system. The 5-2 system consists of feeding a wet feed Monday-Friday once a day. During this time they had the option of eating pellets. On Saturday and Sunday no wet feed was fed. Pellets were the only available feed source on these two days. During the month of November wet feed was fed on Monday, Tuesday, Thursday, and Friday. The other 3 days the mink that had consumed all of the pellets were fed the wet feed. Any mink with pellets remaining was

skipped. No new pellets were feed during the month of November. From the first of December until pelting (second and third weeks of December) all mink in shed #7 were fed the wet feed 7 days a week. It should be noted that wet feed was feed once a day during the entire experiment.

The second feeding program was an all wet feed program. The mink on this program were located in shed #8. They were fed the wet feed once a day, seven days a week. They were on this program for the same time frame as the mink on the wet/pellet program.

3.4 Grading

The males from both groups were hand graded during the first and second weeks in December. The females were graded the first week in January. All of the males were graded by one grader and all of the females by another. The female grader tended to grade stricter than the male grader, thus some downward skewing occurred on the female grades. Additionally, it should be noted that the females graded in January had passed their prime. Again this would be reflected in slightly lower quality grades. The mink were graded on six different traits:

1. Texture
2. Coverage
3. Density
4. Depth
5. Color
6. Size

The density and depth grades were combined to form a single grade by adding the value for each trait together and dividing by two.

This combined grade is called density in the evaluation.

Each mink was assigned a number between 0 and 5 for each trait with 5 being the highest grade. The grades for each mink were entered into a data base and sent to Omicron Genetics of American Fork, Utah. Omicron ran a genetics analysis program on the traits by finding the mean value of each trait for all the mink on the wet/pellet program. The same procedure was used with the mink on the all wet program. Once the means were calculated the two groups were compared to determine significant variations.

4.0 RESEARCH RESULTS

Five means were calculated by the genetics program (the density and depth traits were combined to give an overall density grade). These five are: texture, coverage, density, color, and size. The means for each of these traits, broken down by male and female, are found in Table 4.1 a and b.

Table 4.1a Fur Traits Analysis - Wet/Pellets vs. All Wet Feed Programs (Dark Males and Dark Females, 1990)

MALES:

| <u>Feed Program</u> | <u>Texture</u> | <u>Coverage</u> | <u>Density</u> | <u>Color</u> | <u>Size</u> |
|------------------------|----------------|-----------------|----------------|--------------|-------------|
| Wet/Pellet | 3.60 | 3.35 | 2.77 | 3.62 | 2.74 |
| All Wet | 3.72 | 3.33 | 2.91 | 3.56 | 2.65 |
| Difference | -0.12 | +0.02 | -0.14 | +0.06 | +0.09 |
| Sum of the Differences | | -0.09 | ===== | | |

Table 4.1b Fur Traits Analysis - Wet/Pellets vs. All Wet Feed Programs (Dark Males and Dark Females, 1990)

FEMALES:

| <u>Feed Program</u> | <u>Texture</u> | <u>Coverage</u> | <u>Density</u> | <u>Color</u> | <u>Size</u> |
|------------------------|----------------|-----------------|----------------|--------------|-------------|
| Wet/Pellet | 3.12 | 2.51 | 2.50 | 2.25 | 3.02 |
| All Wet | 3.00 | 2.27 | 2.57 | 2.47 | 3.03 |
| Difference | +0.12 | +0.24 | -0.07 | -0.22 | -0.01 |
| Sum of the Differences | | +0.06 ===== | | | |

From the above data it does not appear as if any significant advantages are achieved by feeding either an all wet or a wet/pellet program. The males on the wet/pellet program did perform slightly better on size but slightly worse on density and texture. Overall, the all wet diet performed better than the wet/pellet diet by .09 points, for the males.

The females on the wet/pellet program did well with texture and coverage. However, they were weak on color. For the females as a group, the wet/pellet program beat the all wet program by .06 points.

Following an analysis by sex and diet (see Table 4.1), I grouped males and females by diet (see Tables 4.2 and 4.3 respectively).

Table 4.2 Wet/Pellets Feed Program - Fur Traits Analysis - Males vs Females (Darks, 1990)

Wet/Pellet Feed Program:

| <u>Sex</u> | <u>Texture</u> | <u>Coverage</u> | <u>Density</u> | <u>Color</u> | <u>Size</u> |
|------------------------|----------------|-----------------|----------------|--------------|----------------|
| Males | 3.60 | 3.35 | 2.77 | 3.62 | 2.74 |
| Females | 3.12 | 2.51 | 2.50 | 2.25 | 3.02 |
| Difference | +0.48 | +0.84 | +0.27 | +1.37 | -0.28 |
| Sum of the Differences | | +2.68 ===== | | w/o size | +2.96 ===== |

Table 4.3 Wet Feed Program - Fur Traits Analysis - Males vs Females (Darks, 1990)

All Wet Feed Program:

| <u>Sex</u> | <u>Texture</u> | <u>Coverage</u> | <u>Density</u> | <u>Color</u> | <u>Size</u> |
|------------------------|----------------|-----------------|----------------|--------------|----------------|
| Males | 3.72 | 3.33 | 2.91 | 3.56 | 2.65 |
| Females | 3.00 | 2.27 | 2.57 | 2.47 | 3.03 |
| Difference | +0.72 | +1.06 | +0.34 | +1.09 | -0.38 |
| Sum of the Differences | | +2.83 ===== | | w/o size | +3.21 ===== |

The males outperformed the females on both diets. It was interesting to note that when grouping males and females on the same diet, the mink on the all wet diet had a .15 point total

advantage over the mink on the wet/pellet diet. When size was not used the difference increased to .25 points.

5.0 CONCLUSIONS

As a whole no significant, overall advantages were realized by either feeding program (see Table 4.1). When comparing male vs. females on the same diets significant results are obtained (see Tables 4.2 and 4.3). The results do not suggest that either program is significantly better for the males because both groups do better than the females on the same program. It should be noted that this type of comparison is not as reliable as using the same sex on different diets. Some skewing will result especially in the size category. For the past year I believe that the all wet program was slightly better than the wet/pellet program based solely on overall pelt quality. However, the differences were so small that other factors such as time costs, equipment costs, feed costs, and/or waste feed costs could cause an individual operator to choose one program over the other. Weather conditions also greatly influence the effectiveness of a feed program. Therefore, the type of year should be considered when determining which type of feeding program to employ.

BIBLIOGRAPHY

1. Patton, David., Pellet 1988, Annual Research Report 1988, Fur Breeders Agricultural CO-OP, Midvale, UT.